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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Dov Ingman

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12/13/2005

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EXAMINER

KANG, JULIANA K

ART UNIT

PAPER NUMBER

2874

DATE MAILED: 12/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/884,463

Applicant(s)

INGMAN ET AL.

Examiner

Juliana K. Kang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 9/26/05(RCE).
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8, 10-14, 16-20, 32-49 and 51-66 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 44-47, 57 and 66 is/are allowed.
- 6) ☒ Claim(s) 16-30, 32-35, 38-43, 48, 49, 51, 55, 56, 63-65 is/are rejected.
- 7) ☒ Claim(s) 1-8, 10-14, 36, 37, 52-54 and 58-62 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

1. The request filed on 9/26/05 for a Request for Continued Examination (RCE) under 37 CFR 1.114 is acceptable and a RCE has been established. An action on the RCE follows.

Presently claims 1-8, 10-14, 16-30, 32-49 and 51-66 are pending claims.

### ***Claim Objections***

2. Claims 10 and 32 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Claim 1, dependent claim of claim 10, recites all the limitation of claim 10 and claim 26, dependent claim of claim 32, recites all the limitation of claim 32.

Claims 12, 13 and 33 are objected because of minor informalities. Claims 12 and 13 recite the terms "an inner layer" and "an outer layer." These terms render the claims vague because the limitations in claim 1 already defines a layer of the hydrophilic nano-particles (inner layer?) and hydrophobic nano-particles (outer layer?) that are around the layer of the hydrophilic nano-particles. Based on the specification it is believed that it's not an applicant's intention to add additional layers of inner and outer layer besides ones that are recited in claim 1. The Examiner suggests that the claims would make more sense to use the terms "an inner layer" and "an outer layer" in claim 1.

Claim 33 recites a limitation "a fiber core" in line 4. It should be correct to read "the fiber core".

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 25 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 25 recites the limitation "the nano-particles" in line 1. There is insufficient antecedent basis for this limitation in the claim. Please note the amendment to claim 22 no longer recite the limitation of nano-particles.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 16-21, 33-35, 42, 48, 49, 51, 55 and 63 are rejected under 35 U.S.C. 102(b) as being anticipated by Lange et al (U.S. Patent 4,705,571).

Lange et al disclose an optical fiber bundle comprising: a plurality of cores (GA1, GA2, GA3); and a cladding layer (filling compound, FCS) wherein the plurality of cores are embedded within the same cladding layer (see Fig. 2 and claim 17 of Lange et al). Lange et al further disclose that the filling compound is comprised of many different materials including hydrophilic fumed silica, hydrophobic fumed silica (see column 4

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lines 3-5), thixotropic agent (see column 8 line 1) and polymer (polyolefin, see column 3 line 12). Lange et al also disclose an over cladding (CS, see Fig. 2). Lange et al disclose fumed silica. Fumed silica is known in the art to have particle sizes in the nanometer ranges. Please note, regarding the rejections above, that method claims 33-35 and 42 parallel article claims without the introduction of any particular manufacturing methods, so that it is proper to examine the articles and method claims together.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 22-32, 43, 56, 64, and 65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lange et al (U.S. Patent 4,705,571).

As described above Lange et al disclose the claimed invention except the optical waveguide stacked on a substrate. Placing an optical fiber on a substrate is well known in the art to secure or to support optical fibers. Thus, it would have been obvious to one with ordinary skill in the art at the time the invention was made to place Lange et al's optical fiber on a substrate either to secure or support the optical fiber for further coupling with other optical elements. Please note, regarding the rejections above, that method claim 43 parallel article claims without the introduction of any particular manufacturing methods, so that it is proper to examine the articles and method claims

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together. Regarding claim 64 and 65, since Lange et al's cladding layer is mixture of hydrophilic and hydrophobic particles, some hydrophobic particles are inherently placed over hydrophilic particles.

9. Claims 38 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lange et al (U.S. Patent 4,705,571) and further in view of Baney et al (U.S. Patent 4,275,118).

As described above, Lange et al teach the claimed invention except the method step of immersing the fiber structure in a water-alcohol medium and drying. Baney et al teach immersing an object into a water-alcohol medium and drying methods to coat the object with colloidal silica to provide stable dispersion of colloidal silica. Thus using such method steps of Baney et al in Lange et al would have been obvious to one having ordinary skill in the art to make the coating of silica particle with stable dispersion.

10. Claims 40 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lange et al (U.S. Patent 4,705,571) and further in view of Tanaka et al (U.S. Patent 4,675,040).

As described above, Lange et al teach the claimed invention except the method step of drawing and drying. Tanaka et al teach method of making optical fiber with method steps of drawing and drying (see abstract). Drawing and drying is well known method steps in the art as taught by Tanaka et al. Thus it would have been obvious to one having ordinary skill in the art at the time the invention was made to use well known method steps of drawing and drying as taught by Tanaka et al in Lange et al to make the optical fiber with low manufacturing costs.

***Allowable Subject Matter***

11. Claims 44, 45, 46, 47, 57, 66, are allowed.

Claims 1-8, 10-14, 53, 54 and 58-62 would be allowable if rewritten or amended to overcome the objection(s), set forth in this Office action.

Claims 36, 37 and 52 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

It appears that there is no prior art made of record that teaches or reasonably suggests an optical fiber comprising a core and a thixotropic cladding layer wherein the thixotropic cladding layer further comprises an inner layer of hydrophilic nano-particles that proximate the surface of the core and an outer layer of hydrophobic nano-particles that is placed around the inner layer of hydrophilic nano-particles.

***Response to Arguments***

12. Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Vitands et al (U.S. Patent 5,505,773) teach an optical fiber cable comprising a thixotropic gel. Heucher et al (U.S. Patent 6,258,885 B1) teach a filling

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compound of thixotropic silica particles used in an optical fiber cable. Levy et al (U.S. Patent 4,810,395) teach a thixotropic grease composition comprising silica colloidal particle filler. Heucher et al (U.S. Patent 5,902,849) teach a hydrophobic and hydrophilic filling compound for an optical cable comprising thixotropic silica particles.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Juliana K. Kang whose telephone number is (571) 272-2348. The examiner can normally be reached on Mon. & Fri. 10:00-6:00 and Tue. & Thur. 10:00-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rod Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

**JULIANA KANG**  
**PRIMARY EXAMINER**

*Juliana Kang*  
12/2/05